SYSTEM AND METHOD FOR OPTIMIZING OPERATIONS
VIA DATA FLOW ANALYSIS

5

A method for modifying serial dependencies in a procedure includes a step of building a graph representation of the procedure. The graph representation has an origin as well as a unique position, relative to the origin, for each memory operation in the procedure. Each memory operation in the representation is designated with a

10   location type. Each of these location types are based on one or more characteristics of the corresponding memory operation that are sufficient to notify the compiler that the memory operation accesses a distinct or disjoint memory location. Memory operations having the same location type as subsequent memory operations are identified. When the graph representation does not include additional memory

15   operations of the same location type between pairs of such memory operations, the subsequent memory operation is moved to a position in the intermediate representation that is closer to the origin.